WHAT IS CLAIMED IS:

1. In a semiconductor device of the type comprising a via wherein said via comprises a layer of titanium placed over a layer of anti-reflective coating (ARC) titanium nitride, a method for preventing a contaminant within said layer of anti-reflective coating (ARC) titanium nitride from combining with portions of said layer of titanium, said method comprising the steps of:

applying a nitrogen plasma to said layer of titanium; and

converting said layer of titanium to a first layer of titanium nitride;

wherein said contaminant does not chemically react with said first layer of titanium nitride.

2. The method as set forth in Claim 1 wherein said contaminant within said layer of anti-reflective coating (ARC) titanium nitride is fluorine.

3. The method as set forth in Claim 2 wherein said fluorine becomes embedded in said layer of anti-reflective coating (ARC) titanium nitride during a partial etch procedure of said layer of anti-reflective coating (ARC) titanium nitride.

4. The method as set forth in Claim 1 wherein said step of applying said nitrogen plasma to said layer of titanium increases a temperature of said semiconductor device to a temperature of approximately four hundred degrees Centigrade.

5. A method for manufacturing a via in a semiconductor device, said method comprising the steps of:

providing a substrate for said semiconductor device;

placing a metal layer over said substrate;

placing a layer of anti-reflective coating (ARC) titanium nitride over said metal layer;

placing a dielectric layer over said layer of anti-reflective coating (ARC) titanium nitride;

performing a mask and etch procedure to etch through said dielectric layer and to partially etch through said layer of anti-reflective coating (ARC) titanium nitride to form a via passage;

depositing a layer of titanium over exposed portions of said dielectric layer and over exposed portions of said layer of anti-reflective coating (ARC) titanium nitride;

applying a nitrogen plasma to said layer of titanium; and

converting said layer of titanium to a first layer of titanium nitride.

6. The method as set forth in Claim 5 further comprising the steps of:

depositing a second layer of titanium nitride over said first layer of titanium nitride;

depositing a layer of tungsten over said second layer of titanium nitride; and

filling said via passage with said layer of tungsten.

7. The method as set forth in Claim 6 wherein a contaminant within said layer of anti-reflective coating (ARC) titanium nitride does not chemically react with said first layer of titanium nitride.

8. The method as set forth in Claim 7 wherein said contaminant within said layer of anti-reflective coating (ARC) titanium nitride is fluorine.

9. The method as set forth in Claim 8 wherein said fluorine becomes embedded in said layer of anti-reflective coating (ARC) titanium nitride during a partial etch procedure of said layer of anti-reflective coating (ARC) titanium nitride.

10. The method as set forth in Claim 5 wherein said step of applying said nitrogen plasma to said layer of titanium increases a temperature of said semiconductor device to a temperature of approximately four hundred degrees Centigrade.

11. The method as set forth in Claim 6 wherein an electrical resistance of said first layer of titanium nitride does not significantly increase during a subsequent thermal cycle.

12. The method as set forth in Claim 6 wherein a volume of said first layer of titanium nitride does not significantly increase during a subsequent thermal cycle.

13. A semiconductor device comprising a via through said semiconductor device, said semiconductor device comprising:

a substrate of said semiconductor device;

a metal layer placed over said substrate;

a layer of anti-reflective coating (ARC) titanium nitride placed over said metal layer;

a dielectric layer placed over said layer of anti-reflective coating (ARC) titanium nitride;

wherein portions of said dielectric layer are etched and portions of said layer of anti-reflective coating (ARC) titanium nitride are partially etched to form a via passage; and

a layer of titanium deposited over exposed portions of said dielectric layer and deposited over exposed portions of said layer of anti-reflective coating (ARC) titanium nitride;

wherein said layer of titanium is converted to a first layer of titanium nitride by applying a nitrogen plasma to said layer of titanium.

14. The semiconductor device as set forth in Claim 13 further comprising:

a second layer of titanium nitride deposited over said first layer of titanium nitride; and

a layer of tungsten deposited over said second layer of titanium nitride;

wherein said via passage is filled with said layer of tungsten.

15. The semiconductor device as set forth in Claim 14 wherein said layer of anti-reflective coating (ARC) titanium nitride comprises a contaminant that does not chemically react with said first layer of titanium nitride.

16. The semiconductor device as set forth in Claim 15 wherein said contaminant within said layer of anti-reflective coating (ARC) titanium nitride is fluorine.

17. The semiconductor device as set forth in Claim 16 wherein said fluorine becomes embedded in said layer of anti-reflective coating (ARC) titanium nitride during a partial etch procedure of said layer of anti-reflective coating (ARC) titanium nitride.

18. The semiconductor device as set forth in Claim 13 wherein said nitrogen plasma that is applied to said layer of titanium increases a temperature of said semiconductor device to a temperature of approximately four hundred degrees Centigrade.

19. The semiconductor device as set forth in Claim 14 wherein an electrical resistance of said first layer of titanium nitride does not significantly increase during a subsequent thermal cycle.

20. The semiconductor device as set forth in Claim 24 wherein a volume of said first layer of titanium nitride does not significantly increase during a subsequent thermal cycle.